

CLAIMS

What is claimed is:

- 1 1. A contact center for receiving and routing realtime and non-realtime communications
2 from a customer to a plurality of agents to elicit a response, the contact center
3 comprising:
4 a. at least one hub configured to receive and route realtime and non-realtime
5 communications from the customer, the at least one hub including:
6 i. at least one server configured to receive realtime and non-realtime
7 communications from the customer;
8 ii. a plurality of gateways configured to receive a voice call from the
9 customer;
10 iii. at least one router coupled to the at least one server, the at least one router
11 configured to normalize realtime and non-realtime communications from
12 the customer; and
13 iv. an application server coupled to the at least one router, the application
14 server configured to route the realtime and non-realtime communications
15 based upon a set of predetermined routing criteria; and
16 b. at least one node coupled to the at least one hub, the at least one node configured
17 to receive realtime and non-realtime communications, the at least one node further
18 configured to route the realtime and non-realtime communications to the plurality
19 of agents.
- 1 2. The contact center as claimed in claim 1 further comprising a node router configured to
2 interface between the at least one hub and the at least one node, wherein the node router
3 provides the application server with the availability status of the at least one node and the
4 plurality of agents.
- 1 3. The contact center as claimed in claim 1 further comprising an immediate workflow
2 engine configured in the application server, wherein the immediate workflow engine
3 includes the predetermined routing criteria.
- 1 4. The contact center as claimed in claim 3 further comprising at least one corporate CRM
2 database coupled to the at least one hub, wherein the immediate workflow engine is

3 configured to store a set of CRM data to and extract the set of CRM data from the at least
4 one corporate CRM database.

- 1 5. The contact center as claimed in claim 1 wherein the at least one server includes:
2 a. an email server configured to receive non-realtime communication including
3 emails and voice messages;
4 b. a web collaboration server configured to receive realtime communications
5 including web collaboration requests; and
6 c. a voice server coupled to the plurality of gateways, the voice server configured to
7 receive the voice call from the plurality of gateways.

- 1 6. The contact center as claimed in claim 5 wherein the at least one router includes:
2 a. an email router corresponding to the email server;
3 b. a web collaboration router corresponding to the web collaboration server; and
4 c. a voice router corresponding to the voice server.

- 1 7. The contact center as claimed in claim 1 further comprising a software ACD configured
2 in the application server, wherein the software ACD matches the at least one node to
3 realtime and non-realtime communications.

- 1 8. The contact center as claimed in claim 7 wherein the software ACD matches the plurality
2 of agents to realtime and non-realtime communications.

- 1 9. The contact center as claimed in claim 8 wherein one a first one of the at least one nodes
2 match realtime and non-realtime communications to a second one of the at least one
3 nodes when a plurality of nodes exist, and the at least one hub is not operational, and
4 further wherein the at least one node matches the realtime and non-realtime
5 communications to the plurality of agents when the at least one hub is not operation.

- 1 10. The contact center as claimed in claim 8 further comprising a nuasis database, coupled to
2 a workflow engine, the nuasis database configured to record a set of transaction data
3 produced by the workflow engine, wherein the workflow engine is the immediate
4 workflow engine or a deferred workflow engine.

- 1 11. The contact center as claimed in claim 10 further comprising an in memory database
2 coupled to the nuasis database, the in memory database configured to replicate the set of
3 transaction data in the nuasis database, further wherein the in memory database is
4 replicated in each of the at least one node.
- 1 12. The contact center as claimed in claim 11 further comprising a contact history viewer, the
2 contact history viewer configured to allow the plurality of agents to view the set of
3 transaction data.
- 1 13. The contact center as claimed in claim 7 wherein the software ACD calculates a contact
2 priority value for every realtime and non-realtime communication when one of the
3 plurality of agents is available.
- 1 14. The contact center as claimed in claim 1 wherein the at least one node includes:
2 a. a node voice server configured to receive a local voice call from a local gateway;
3 b. a node voice router coupled to the node voice server and configured to receive the
4 local voice call from the node voice server; and
5 c. a node application server coupled to the node voice router and the at least one
6 hub, wherein the node application server is configured to receive the local voice
7 call from the node voice router, and further wherein the node application server is
8 configured to receive realtime and non-realtime communication from the at least
9 one hub.
- 1 15. The contact center as claimed in claim 1 wherein the plurality of gateways include:
2 a. a proxy table configured in each of the plurality of gateways, wherein the plurality
3 of gateways send the voice call to one of at least one proxy server; and
4 b. a call restoration data table configured in each of the plurality of gateways,
5 wherein the call restoration data table provides data to restore a lost call.
- 1 16. The contact center as claimed in claim 15 wherein the voice call is divided by the
2 plurality of gateways into a session initiation protocol portion and a real time protocol
3 portion.

- 1 17. The contact center as claimed in claim 16 wherein the at least one hub includes the at
2 least one proxy server, the at least one proxy server configured to receive the session
3 initiation protocol portion of the voice call.
- 1 18. The contact center as claimed in claim 16 further comprising at least one media server
2 configured in the at least one hub, the at least one media server configured to receive the
3 real time protocol portion for the voice call.
- 1 19. The contact center as claimed in claim 15 wherein the at least one node are coupled to
2 each of the at least one hub with a local area network connection.
- 1 20. The contact center as claimed in claim 15 wherein the plurality of gateways are
2 configured such that when one of the plurality of gateways fails, the remainder of the
3 plurality of gateways remain operational.
- 1 21. The contact center as claimed in claim 15 wherein the proxy table selects the appropriate
2 proxy server based on a priority scheme.
- 1 22. The contact center as claimed in claim 15 wherein the data provided to the call restoration
2 data table is transmitted to the call restoration data table in a session initiation protocol
3 packet, further wherein the session initiation protocol packet includes a header and an
4 SDP body.
- 1 23. The contact center as claimed in claim 22 wherein the data provided to the call restoration
2 data table is stored as a key value pair, further wherein the key value pair is derived from
3 the header and the SDP body.
- 1 24. The contact center as claimed in claim 5 further comprising:
2 a. a plurality of shared file folders configured in the email server where non-realtime
3 communications are received and stored, wherein an aged communication is
4 extracted from the plurality of shared file folders based on a set of predetermined
5 escalation criteria;

- 6 b. an escalation service coupled with the plurality of shared file folders such that the
7 escalation service routes the aged communication to the immediate workflow
8 engine; and
9 c. a plurality of designated agents such that the aged communication is displayed on
10 a desktop of a first designated agent after receiving the aged communication from
11 the immediate workflow,
12 wherein the first designated agent provides an immediate response to the aged
13 communication on the desktop, and further wherein the escalation service escalates an immediate
14 communication to the immediate workflow engine for routing to the first designated agent.
- 1 25. The contact center as claimed in claim 24 wherein the desktop includes a visual indicator,
2 further wherein the visual indicator includes an expiration time for the aged
3 communication in the plurality of shared file folders.
- 1 26. The contact center as claimed in claim 24 wherein the communication is designated as
2 immediate based on the set of predetermined escalation criteria before the communication
3 becomes aged.
- 1 27. The contact center as claimed in claim 24 wherein the escalation service checks a present
2 threshold for a maximum number of immediate workflows and delays escalating the
3 communications designated as immediate until the number of immediate workflows is
4 below the threshold.
- 1 28. The contact center as claimed in claim 24 further comprising a second designated agent,
2 wherein when the first designated agent does not answer the aged communication, the
3 immediate workflow routes the aged communication to the second designated agent.
- 1 29. The contact center as claimed in claim 28 further comprising sending an acknowledgment
2 message when the first and second designated agents are unavailable.
- 1 30. The contact center as claimed in claim 28 wherein the aged communication is routed to
2 the second designated agent after the first designated agent does not answer the prompt.

1 31. The contact center as claimed in claim 28 wherein the aged communication is routed to
2 the second designated agent after the first designated agent answers the prompt by
3 declining to respond to the aged communication.

1 32. The contact center as claimed in claim 24 wherein the first designated agent is prompted
2 when the first designated agent does not respond within a predetermined timeout period
3 after the aged communication is displayed on the desktop.

1 33. The contact center as claimed in claim 24 wherein the set of predetermined escalation
2 criteria are variable such that the set of predetermined escalation criteria will change
3 while the first designated agent responds to the aged communication.

1 34. The contact center as claimed in claim 24 wherein the first and second designated agents
2 may select non-realtime communications from the plurality of shared file folders that are
3 not designated as aged, and further wherein the first and second designated agents
4 respond to those non-realtime communications not designated as aged.

1 35. The contact center as claimed in claim 24 wherein an agent is designated based on a set of
2 predetermined designation criteria.

1 36. The contact center as claimed in claim 1 further comprising:

- 2 a. a remote data access device;
3 b. a remote terminal coupled with the remote data access device through a data
4 circuit; and
5 c. a remote telephone coupled with the plurality of gateways through a telephone
6 circuit,

7 wherein when a remote agent logs the remote terminal into the contact center, a voice
8 component of the voice call is transmitted from the plurality of gateways to the remote telephone
9 and a data component of the voice call is transmitted from the contact center to the remote
10 terminal.

1 37. The contact center as claimed in claim 36 wherein when the remote terminal logs into the
2 contact center, the remote terminal provides a phone number to direct the transmission of

3 the voice component of the voice call from the plurality of gateways to the remote
4 telephone.

1 38. The contact center as claimed in claim 36 wherein the remote agent can respond to the
2 voice call using the remote telephone and the remote terminal.

1 39. The contact center as claimed in claim 36 wherein the telephone circuit is a public
2 switched telephone network.

1 40. The contact center as claimed in claim 36 wherein the data circuit is a high speed internet
2 connection.

1 41. The contact center as claimed in claim 36 wherein the data circuit is a high speed wireless
2 internet connection.

1 42. The contact center as claimed in claim 36 wherein the remote data access device is a VPN
2 device.

1 43. The contact center as claimed in claim 1 further comprising a graphical user interface for
2 displaying on an agent desktop, the graphical user interface including:

- 3 a. a shutters managed display having a task bar, wherein the task bar includes at
4 least one managed application;
5 b. at least one shutter icon corresponding to each one of the at least one managed
6 applications; and
7 c. a workflow having at least one step corresponding to each one of the at least one
8 shutter icons, wherein one of the at least one shutter icons is selected according to
9 the corresponding step of the workflow, and the managed application
10 corresponding to the selected shutter icon is displayed in a managed application
11 display area,

12 wherein a predetermined set of rules determines the size, placement and visibility of the
13 at least one managed application in the managed application display area.

- 1 44. The contact center as claimed in claim 43 further wherein the managed application
2 corresponding to the selected shutter icon is displayed outside of the managed application
3 display area.
- 1 45. The contact center as claimed in claim 43 further comprising a quick start bar, wherein
2 the quick start bar includes at least one non-managed application.
- 1 46. The contact center as claimed in claim 43 further comprising a contact center control
2 panel illustrating current contact information.
- 1 47. The contact center as claimed in claim 43 wherein the graphical user interface is
2 displayed on the agent desktop having a display and an input device.
- 1 48. The contact center as claimed in claim 47 wherein the input device is used to selectively
2 input data in to any one of the at least one managed applications.
- 1 49. The contact center as claimed in claim 43 wherein when one of the plurality of agents
2 select any of the at least one shutter icons, the corresponding managed application is
3 displayed in the managed application display area.
- 1 50. The contact center as claimed in claim 1 further comprising a second graphical user
2 interface for displaying in an application on the agent desktop, the second graphical user
3 interface including:
4 a. a view including a plurality of wedges, wherein each of the plurality of wedges
5 represents a value;
6 b. a thumb corresponding to each of the plurality of wedges, the thumb configured to
7 allow a user to change the value of the corresponding wedge; and
8 c. a track forming an outside edge of the view, the track configured to allow the user
9 to change an attribute of the second graphical user interface,
10 wherein when the user changes the value of any of the plurality of wedges, the remaining
11 wedges adjust their values according to a set of predetermined allocation criteria.
- 1 51. The contact center as claimed in claim 50 wherein the thumb is configured such that the
2 user changes the value of one of the plurality of wedges by dragging the thumb.

- 1 52. The contact center as claimed in claim 50 wherein the thumb and the track are configured
2 such that the user changes the value of one of the plurality of wedges by clicking on the
3 track.
- 1 53. The contact center as claimed in claim 50 wherein the sum of the values of the plurality
2 of wedges is a constant value.
- 1 54. The contact center as claimed in claim 53 wherein the track is configured such that the
2 user changes the attribute of the graphical user interface by dragging the track.
- 1 55. The contact center as claimed in claim 54 wherein the attribute of the second graphical
2 user interface is the constant value.
- 1 56. The contact center as claimed in claim 50 wherein any of the plurality of wedges can be
2 locked by the user such that the value corresponding to the locked wedge will not change.
- 1 57. The contact center as claimed in claim 50 further comprising an allocation algorithm,
2 wherein the allocation algorithm creates a relationship between any of the values of the
3 plurality of wedges.
- 1 58. The contact center as claimed in claim 50 further comprising a plurality of text boxes
2 corresponding to each of the plurality of wedges, wherein the text boxes include the value
3 of each of the plurality of wedges, and further wherein the user may change the value of
4 any of the plurality of wedges by entering a new value into any of the plurality of text
5 boxes.
- 1 59. The contact center as claimed in claim 50 further comprising a plurality of control
2 buttons, wherein the control buttons are programmable, thereby allowing the user to
3 customize the function of the control buttons.
- 1 60. The contact center as claimed in claim 50 wherein the view is a circle.
- 1 61. The contact center as claimed in claim 50 wherein the view is a rectangle.

1 62. The contact center as claimed in claim 50 wherein the view is a bar graph.

1 63. A method of distributing realtime and non-realtime communications in a contact center to
2 elicit a response, the method comprising:

- 3 a. receiving the realtime and non-realtime communications in at least one hub,
4 wherein the at least one hub includes at least one server configured to receive
5 realtime and non-realtime communications;
6 b. normalizing the realtime and non-realtime communications, wherein at least one
7 media router is configured for normalizing the realtime and non-realtime
8 communications; and
9 c. routing the realtime and non-realtime communications, wherein an application
10 server is configured to route the realtime and non-realtime communications to at
11 least one node based upon a set of predetermined routing criteria, further wherein
12 the at least one node is configured to route the realtime and non-realtime
13 communications.

1 64. A contact center for distributing realtime and non-realtime communications to elicit a
2 response, the contact center comprising:

- 3 a. means for receiving the realtime and non-realtime communications in at least one
4 hub;
5 b. means for normalizing the realtime and non-realtime communications, wherein
6 the normalizing means are coupled to the receiving means; and
7 c. means for routing the realtime and non-realtime communications to at least one
8 node based upon a set of predetermined routing criteria, wherein the routing
9 means are coupled to the normalizing means.